

encryption and the private key is used in decryption. Providing that the public key encryption algorithm is adopted in the present invention, the digital file is encrypted with a public key authenticated by a predetermined authentication organization, such that only a user having a private key can decrypt the digital file.

Further, an identifier, which can be identified only by the managing company of the main server 10 and the sub-servers 20-1 through 20-n, is inserted in each of the advertising 10 digital file, the deteriorated file and the encrypted file. For example, the identifier is a watermark inserted in the first parts or latter parts, or both parts of the digital file.

The inserted position of the identifier is determined 15 depending on a start position of file transmission according to transmission rules contracted between the main server 10 and the P2P agent servers 110-1 through 110-n. Here, if the main server 10 requests a transmission of a predetermined digital file of the P2P Web agent servers 110-1 through 110-n, 20 and then the P2P Web agent servers 110-1 through 110-n start to transmit the first parts of the digital file, the identifier is inserted in the first parts of the advertising digital file, the digital file with a low quality, or the encrypted digital file. On the other hand, if the P2P Web 25 agent servers 110-1 through 110-n start to transmit the latter

parts of the digital file, the identifier is inserted in the latter parts of the advertising digital file, the digital file with a low quality, or the encrypted digital file.

The reason for determining the inserted position of the 5 identifier depending on the transmission start position of the digital file according to the contracted transmission rules is that the main server 10 receives only some parts of the digital file searched through the P2P Web, and detects the identifier from them at step S110, as will be described in 10 more detail later.

In case the transmission rules between the main server 10 and agent servers 110-1 through 110-n are indefinite or different from each other, it is possible to insert the identifier into both the first and latter parts of the 15 advertising digital file, the digital file with a low quality, or the encrypted digital file.

Moreover, the main server 10 accesses the data communication network 300 through the network interface unit 30 according to a selection of the supervisor, and then is 20 connected to the P2P list providing server 100 via the network 300 at step S30. Following the step S30, the main server 10 sends a request signal to the P2P list providing server 100 at step 40 for a transmission of the P2P list information.

The main server 10 checks a response from the P2P list 25 providing server 100 and determines whether or not the P2P

list requested at step S40 has been received from the server 100 at step S50. If it is determined that the requested P2P list information is not received from the server 100, a processing step of the main server 10 returns to step S40 and 5 re-sends the request signal to the server 100 for transmission of the P2P list information.

On the other hand, if it is determined that the requested P2P list information has been received from the server 100, the main server 10 stores the P2P list received from the 10 server 100, and releases its connection to the server 100 at step S60.

Generally, the P2P list information received from the P2P list providing server 100 is stored in the predetermined area of the storage unit 12, however, it can be stored in a 15 database 11 through the process of a schema conversion or a mapping.

Next, the main server 10 accesses the data communication network 300 through the network interface unit 30 according to a selection of the supervisor or an automatic execution 20 algorithm of the sharing search program for the main server 10, and is connected to the agent servers 110-1 through 110-n mediating the P2P Web according to the P2P list information received from the P2P list providing server 100 at step S70.

In this case, the main server 10 decides a sequence of 25 accessing each P2P Web listed in the received P2P list by a